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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/203,166 12/01/98 BEALL

G CGW-235.1

EXAMINER

MMC1/0626

MAURICE M KLEE  
1951 BURR STREET  
FAIRFIELD CT 06430

ART UNIT PAPER NUMBER

2874  
DATE MAILED:

06/26/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

<b>Office Action Summary</b>	<b>Application No.</b> 09/203,166	<b>Applicant(s)</b> BEALL ET AL.	
	<b>Examiner</b> AKM E. Ullah	<b>Art Unit</b> 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 April 2001.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 41-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 41-50 and 54-59 is/are allowed.
- 6) ☐ Claim(s) 52, 60 and 61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

**Attachment(s)**

- |  |  |
|--|--|
| 15) <input type="checkbox"/> Notice of References Cited (PTO-892)                                  | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)              | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) : <u>1</u> | 20) <input type="checkbox"/> Other: _____                                    |

*Detailed Action*

*Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.*

*Priority Claimed by Applicant*

*This application is a continuation of 09/101,630  
filed on 07-14-1998*

*which is a 371 of PCT/US96/13062 filed on 08-07-1996*

*Provisional application no. 60/010,058 filed on 01-16-1996*

In response to the office action, dated January 22, 2001 applicant response as follows:

Claims 51 and 53 have been cancelled.

Claims 41-50, 52, 54-61 are pending in this application.

Claims 41-50, and 54-59 are allowed over the prior art as of record.

Claims 52, and 60-61 are rejected.

35 USC 103 Rejections

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 52, and 60-61 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Kashyap et al (U.S.P.NO. 4,923,278).

Kashyap et al discloses an optical device comprising a negative expansion substrate having an upper surface and an optical fiber is mounted on the substrate at least two spaced apart locations. The optical fiber has positive coefficient of thermal expansion. For details see figure 3, claims 1 & 2, column 6 lines 57-68 through lines 1- 9 of column 7. Kashyap et al teaches that the optical fibers which are attached by a clamps 14 and 15 which may be a releasable type such as screw clamps and instead of the releasable clamps an adhesive compound may be employed to attach the fiber to the substrate.

Although the reference (Kashyap et al) fails to disclose the optical fiber component having a grating in such way that grating lies between and at a distance from each end of the substrate. However, in lines 40-46 of column 6, the reference et al teaches that optical fibers disclosed in the reference are expected to be useful in sensor applications or a fiber external cavity single- mode lasers.

Note that the use of grating in the fiber as an efficient way to detect the temperature through frequency measurement of use of the fiber with the grating in a single mode lasers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the well known techniques in order to provide a grating on the fiber of Kashyap et al between the two fixed location for the purpose of advantageously providing an efficient temperature sensor or a distributed feedback single mode laser, as claimed, if so desired.

Any other differences between the claimed subject matter and the references are such that the claimed subject matter would be obvious to a person of ordinary skill in the art.

Claims 52 and 60-61 are also rejected under 35 USC 103 (a) as being unpatentable over (Material Chemistry and Physics, vol. 42, 1995 pages 214-215 ) A.K. Chu et al.

Chu et al disclose an athermal waveguide device comprising a negative expansion substrate made of  $Ta_2O_5$  and a positive thermal expansion optical component made of SiOx is fixed on the substrate at least two spaced apart locations. Note that SiOx layer is fixed onto the substrate at least two locations. The SiOx layer is construed as the optical component, since it's apart of an optical waveguide. The gist of the claim invention is clearly taught by the reference. The reference clearly mentioned the teachings of the claimed invention.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Chu et al to provide an athermal optical fiber grating device comprising a negative expansion substrate having an upper surface and first and second ends and an optical fiber is fixed to the substrate in upper surface at least two spaced apart locations and a grating defined in the optical fiber between and at a distance from each end, as claimed, if so desired.

Applicant's arguments filed April 09, 2001 have been fully considered but they are not persuasive.

(1) Applicant argues that Kashyap et al patent has absolutely nothing to do with gratings. The use of gratings for temperature stabilization on optical fibers and waveguides are very elementary teachings in this art as applicant mentioned in his cited prior art statement filed on January 14, 1999. References 10-11, 25,27 and 33-34 relate to temperature stabilization of Bragg gratings in optical fibers and waveguide and reference no.15 relates to using temperature to change the reflection wavelength of a Bragg grating in an optical fiber.

(2) Applicant argues that there is no connection between a material having a negative coefficient of thermal expansion and a grating.

(3) Applicant also argues that Chu et al teach away the use of a material having a negative CTE to achieve thermal compensation.

Note that reference need not to teach all the structures. There is always an implied suggestion for applying the teaching of the above mentioned reference for fiber

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grating affixed with substrate. That is , the skilled worker who is pressured to have knowledge of the prior art, with this particular reference before him, would immediately recognize the desirability of employing the teaching of Kashyap et al for the use of a material having a negative coefficient of thermal expansion to provide thermal compensation to a grating. Thus, this action is made final.

### Claims Allowed

Claims 41- 50 and 54-59 are allowed over the prior art as of record.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### Contact Information

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akm Enayet Ullah whose telephone number is 703-308-4885. The examiner can normally be reached on Mon.-Fri. 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 703-3084819. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7721 for regular communications and 703-308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Akm Enayet Ullah  
Primary Examiner  
Art Unit 2874

AUllah  
June 13, 2001